

DISCOVERY LS

PET/CT HYBRID IMAGING SCANNER



A whole new world in cancer care.



GE Medical Systems

gemedicalsystems.com

Our commitment to oncology care.

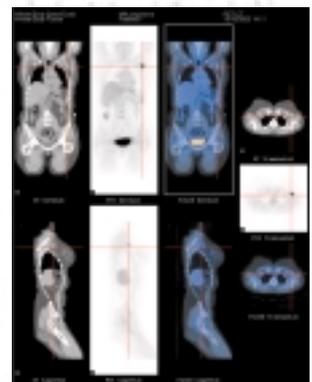
Cancer. The escalating numbers speak volumes about the overwhelming challenge we face today.

In the United States, statistics predict one out of two men and one out of three women will develop cancer. Its devastating reach now extends to four out of five families. And cancer has advanced to become the second leading cause of death following heart disease.

At GE Medical Systems, we understand the pressure you face in the fight against cancer. So we're working in tandem with you to find a better way to diagnose and treat cancer. To help physicians detect it early. To help physicians treat it more effectively. To monitor response to therapy accurately. And to help doctors bring cures faster.

This motivation has led us to create a remarkable new cancer-fighting tool, which will enable physicians to personalize cancer treatment.

Discovery Image



Fusion imaging combines functional information from PET with the anatomic information from CT to help physicians detect cancer.

Providing more accurate diagnosis, staging and treatment.

Introducing Discovery LS. Discovery LS combines the functional information of Positron Emission Tomography (PET) with the anatomic information of Computed Tomography (CT) in one, clinically proven, revolutionary scanner. By providing metabolic data in an anatomical context, Discovery LS helps physicians provide more accurate and intuitive diagnosis, staging and treatment of cancer. And that can result in improved patient outcomes, lower medical costs and increased productivity.

Imagine, in one rapid exam, you'll get the critical diagnostic information you need to give your patients the best possible care.

Discovery LS can help you determine if a patient has cancer. Where it is. Whether there are multiple tumors or metastases. Whether it's spreading. What stage it's in. The optimal therapy. Whether the therapy is working. And if there's recurrence.

It can streamline healthcare delivery and costs by avoiding multiple and unnecessary tests and surgeries. And because Discovery LS can help reveal cancer before it can be seen with other imaging modalities, your patients can get a head start on treatment.

Combining powerful technologies.

By merging GE's PET Advance NXi and GE's LightSpeed™ Plus CT system into one powerful scanner, you gain exceptional images and information that would normally take two separate scanners more than twice the time to provide. Plus, you can use Discovery LS as a stand-alone CT or stand-alone PET system for your most complex applications to maximize productivity and utilization.

PET images body function on the cellular level – revealing lesions – while CT captures the body's anatomical structure for precise lesion localization. When detected lesions are

only a few millimeters in size, physicians benefit from precision image fusion to pinpoint location for surgery and/or radiation therapy. That's why this extraordinary combination is so powerful. And so essential.

Streamlining diagnosis for increased productivity.

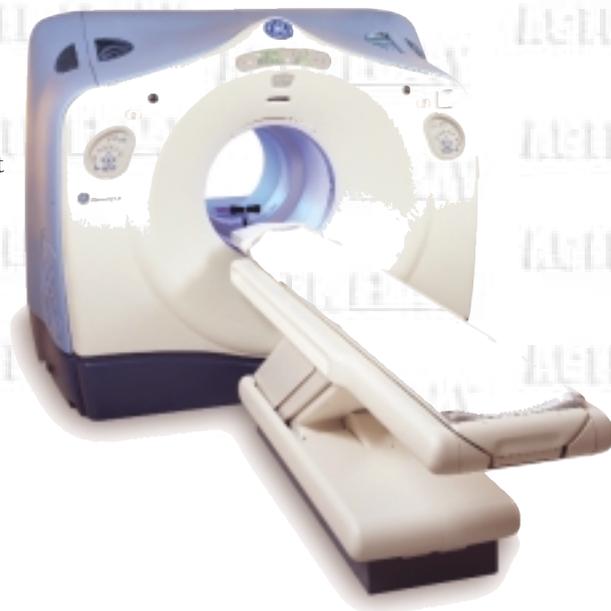
Discovery LS offers greater value compared to operating PET and CT scanners independently. And it provides more precise diagnostic information because the patient is imaged on the same scanner and remains on the same table. During one exam with Discovery LS, you capture PET images and CT images essential for anatomic reference. And all this can be done on one powerful workstation.

With a traditional PET scanner, it would take 20 minutes for the transmission scan alone. But with Discovery LS, the CT scan is counted in seconds. This means you scan more patients and increase your productivity.

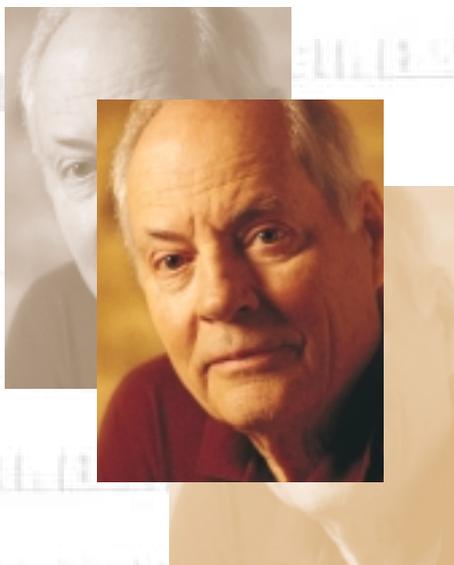
Rapid patient results.

For patients undergoing radiation therapy or surgery, Discovery LS provides perfect registered and fused anatomical and functional images for optimal treatment planning and followup.

Now all the information can become available in less than 30 minutes. Discovery LS eliminates the guesswork and delays, and can help you advance patients on the treatment path faster than ever before.



Discovery LS



Discover the
perfect fusion.

Exceptional whole-body PET images.

PET has the unique ability to help doctors detect changes in body chemistry. By monitoring glucose metabolism, PET pinpoints cancer cell activity. It reveals tissue areas that appear to be using larger than normal amounts of glucose, a sign that cancer cells are growing and dividing.

Discovery LS features GE's PET Advance NXi functionality. It assesses the body's chemical or physiological changes that often precede anatomical changes visible in CT or MR.

Advance NXi is a state-of-the-art clinical and research PET scanner. The scanner is optimized for routine 2D and 3D studies and provides outstanding image quality with highest attainable throughput. Plus, it grants easy and flexible operation with powerful image, display and analysis tools.

No matter how you look at it, the images speak volumes. Advance NXi's innovative detector and scanner design ensures the highest 2D and 3D sensitivity, full-field uniformity of resolution and high count rate capability, which produces outstanding whole-body PET images. The high count rate capability is important for imaging short-lived radio pharmaceuticals such as Rb_{82} and NH_3 for studies of the heart, and O_{15} and C_{11} for brain applications, thus allowing for maximum application flexibility.

Leading CT technology.

Discovery LS features GE's LightSpeed CT technology, the scanner that defined high-quality multi-slice imaging.

Discovery LS provides LightSpeed's comfortable and familiar diagnostic platform, and delivers unsurpassed multi-slice submillimeter CT image quality and clinical flexibility for exceptional patient care.

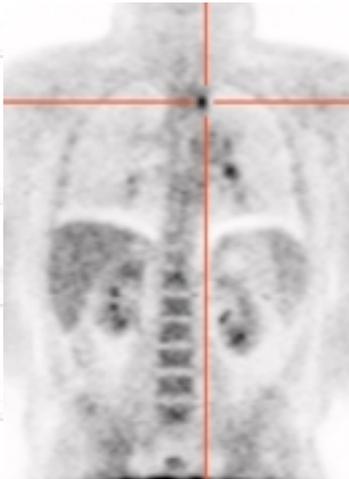
With gantry rotation speeds as fast as .5 seconds, as well as variable scan speeds adjustable in .1-second increments, you can accomplish a full-body exam in a single breath-hold, reducing motion artifacts. This speed is also important for cardiac applications that require rapid acquisition to eliminate heart motion.

LightSpeed's ability to acquire thinner slices creates sharper images by reducing artifacts. Its multi-slice capability provides increased coverage, better image quality and decreased acquisition time. It also provides the ability to reconstruct multiple slice thicknesses from one data acquisition. LightSpeed's

ability to produce submillimeter slices offers the highest resolution images possible to help physicians localize lesions, which is important for radiation treatment planning.

And it's built with productivity in mind. LightSpeed eliminates time-intensive steps and extensive manual interaction. Its unique user interface, built-in protocols and sophisticated post-processing capabilities reduce total exam time.

PET Image



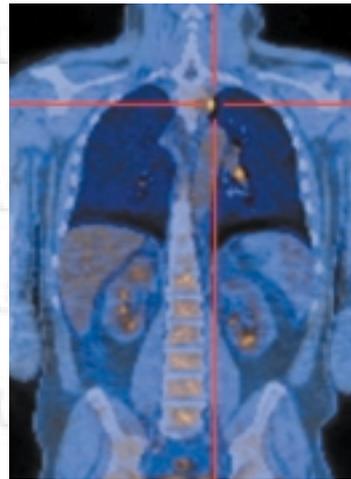
PET pinpoints cancer cells via increased metabolic activity.

CT Image



CT provides the patient's anatomic reference to help localize cancer.

Discovery Image

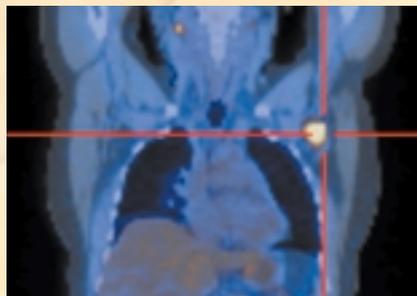


When fused, the combined image shows the lesions in their proper anatomic context.

ILLUMINATI

Melding PET and CT technologies into one powerful scanner creates a whole new world of diagnostic capability. By clearly imaging ongoing body function – and anatomical structure – Discovery LS gives healthcare providers a clearer view of how the body is performing as patients advance along the cancer care path.

diagnosis



Presenting patients with a clear diagnosis.

By gaining functional and anatomical data at the same time, you'll get critical information early in the game – right when you need it.

Early detection can change patient outcomes significantly. Knowing the extent and location of cancer can help to determine the best course of treatment.

Discovery LS serves as the perfect tool for a patient's primary care physician or radiologist to confirm the initial cancer diagnosis – whether a tumor is malignant or benign.

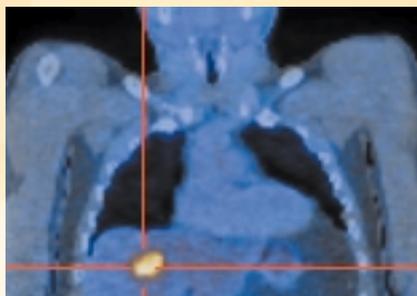
Discovery LS can also aid surgeons in locating lesions and eliminating unnecessary surgeries for patient peace of mind.



IMAGING INVEST

staging

I M A G I N E A W H

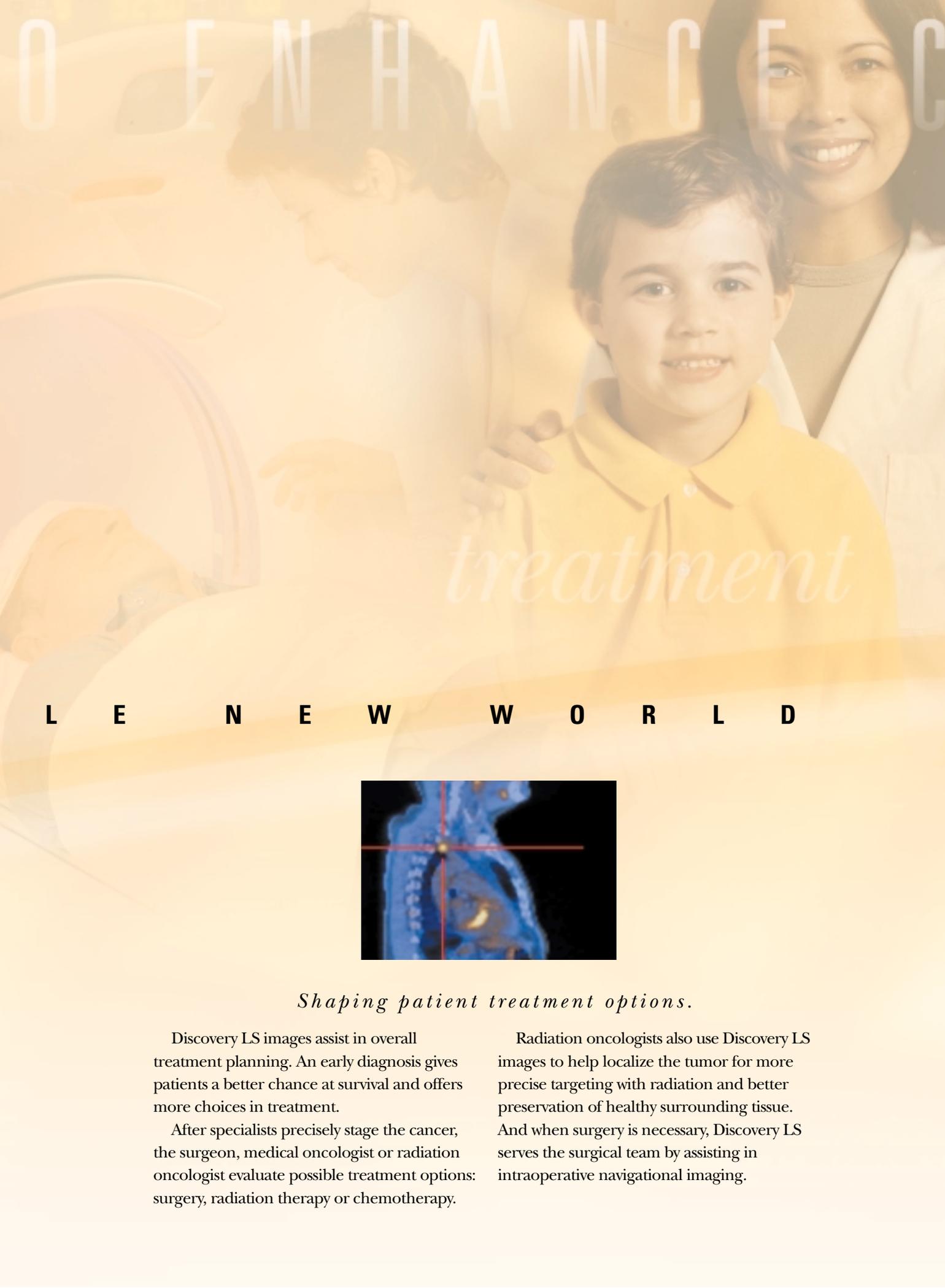


A team effort in patient analysis.

Surgeons, medical oncologists or radiation oncologists work together to determine tumor staging, which will influence treatment options.

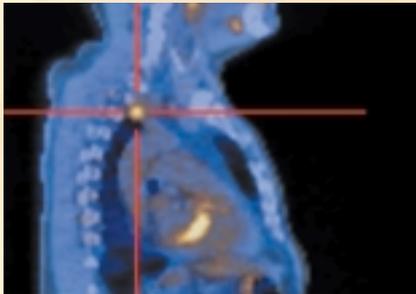
Discovery LS plays a key role by providing the radiologist, surgeon or pathologist with images to gain further information to determine precise cancer stages and metastasis.

O E N H A N C E C



treatment

L E N E W W O R L D



Shaping patient treatment options.

Discovery LS images assist in overall treatment planning. An early diagnosis gives patients a better chance at survival and offers more choices in treatment.

After specialists precisely stage the cancer, the surgeon, medical oncologist or radiation oncologist evaluate possible treatment options: surgery, radiation therapy or chemotherapy.

Radiation oncologists also use Discovery LS images to help localize the tumor for more precise targeting with radiation and better preservation of healthy surrounding tissue. And when surgery is necessary, Discovery LS serves the surgical team by assisting in intraoperative navigational imaging.

A N C E R C A R E

Discovery LS revolutionizes cancer care every step

of the way by providing detailed information for

diagnosis, treatment options and patient followup.

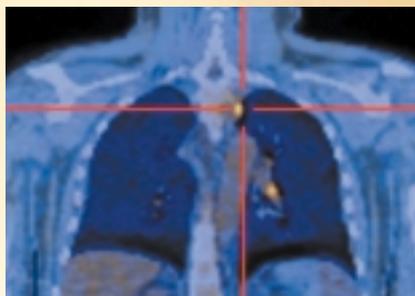
It delivers vital data to locate the primary tumor

site, grade the degree of malignancy, determine

tumor staging, develop precise radiation treatment

plans and monitor treatment success.

follow-up



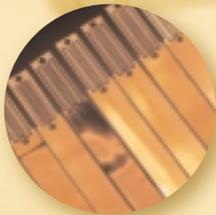
Discovering answers after treatment.

Once a patient has undergone treatment, caregivers rely on Discovery LS images to evaluate the treatment's success and monitor the patient's progress. Before now, differentiating scar tissue from recurring cancer was difficult.

Not any more. Discovery LS images aid in detecting recurrence and help physicians determine appropriate treatment decisions for improved patient care.

Discovery LS

A powerful fusion of imaging modalities.



PET subsystem design

Optimal design for excellent image quality.

- High BGO stopping power
- Large detector ring size
- Optimal crystal geometry
- Long, tungsten collimators
- Fast and reliable electronics

CT subsystem design

Engineered for speed and image quality.

- HiLight output, low afterglow, patented ceramic detector material
- High power, long-life Performix x-ray tube
- High throughput reconstruction electronics

Workstation

Streamlined, integrated workflow.

- Easy-to-use LightSpeed console
- Pre-set PET and CT acquisition & reconstruction protocols with one-touch activation
- High-resolution image displays
- Fast Unix operating system
- Automated reconstruction, filming, networking and archiving protocols

Connectivity

Transfer images anywhere.

- Meets PET/CT DICOM standards
- Imports data from other modalities
- IMRT connectivity

Patient table

Designed with the operator and patient in mind.

- Table movement for optimal image registration
- Operator-friendly dual controls
- Pre-set extended table positioning for long scannable range
- Full range of motion
- Easy patient access
- Optional radiation therapy table top

The GE continuum keeps innovation flowing.

Through Six Sigma, a corporate-wide commitment to quality, GE designs customer-defined products, processes and services.

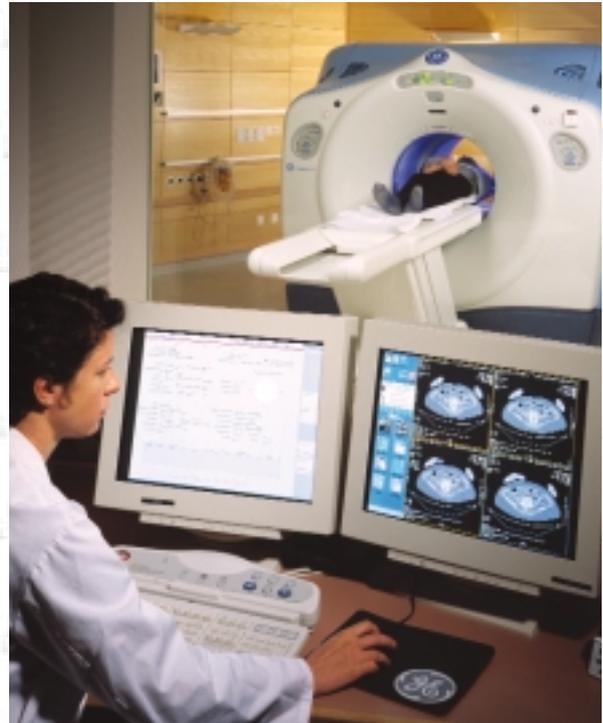
When you purchase a GE Discovery LS scanner, it comes with all the extras you've come to expect from the global leader in diagnostic imaging.

- Market analysis
- Customized financing solutions
- Site planning
- InSite™ diagnostic network
- World-class education and training
- Enterprise-wide networking solutions
- Productivity-enhancing process improvements
- Help in understanding complex reimbursement issues
- PET/Advantages – a comprehensive local marketing program

To make your purchasing decision even easier, Discovery LS offers premium technology, reliable system performance and customized financing solutions.

You can feel secure in knowing the GE Continuum of product development will keep you on the forefront of emerging technologies and future applications, so you can help lead the way in the fight against cancer and other diseases, today and tomorrow.

GE is also forging new partnerships. GE Medical Systems and Varian Medical Systems have come together in a unique alliance to bring you See & Treat™ Cancer Care – a visionary new approach to cancer care. This alliance of expertise combines GE's anatomical and functional imaging with Varian's high-resolution Intensity Modulated Radiation Therapy (IMRT) technology to help physicians localize and treat cancers more precisely.



*For more than 50 years, healthcare providers worldwide
have relied on GE Medical Systems for medical technology,
services and productivity solutions.*

*So no matter what challenges your healthcare
system faces—you can always count on GE
to help you deliver the highest quality healthcare.*

For details, please contact your GE representative today.



GE Medical Systems
We bring good things to life.

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Internet – gemedicalsystems.com
GE Medical Systems – Americas: Fax 262-544-3384
P.O. Box 414, Milwaukee, Wisconsin 53201 U.S.A.
GE Medical Systems – Europe: Fax 33-1-30-70-94-35
Paris, France
GE Medical Systems – Asia:
Tokyo, Japan – Fax: +81-425-85-5490
Hong Kong – Fax: +852-2559-3588